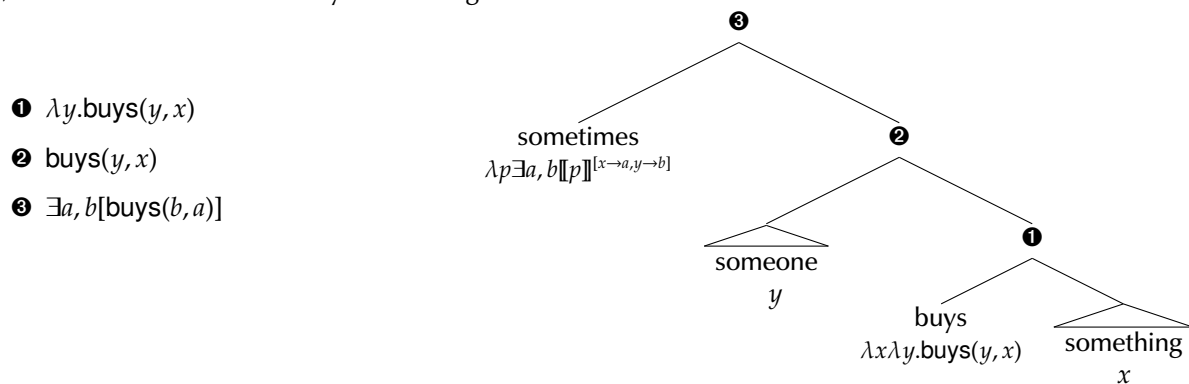# homework 4

Semantics 3, UCLA Linguistics

due April 25, 2022

For this homework, we'll do some compositional semantics to make sure we're all on the same page. For each of the phenomena we've investigated so far, I'll ask you to provide a compositional derivation for the truth conditions of a relevant sentence. Below I'll demonstrate two options for doing this – in a derivation tree or step-by-step – for the phenomenon of unselective binding from Week 1.

(1)   Sometimes someone buys something.   **a derivation tree**

❶ $\lambda y.\text{buys}(y, x)$

❷ $\text{buys}(y, x)$

❸ $\exists a, b[\text{buys}(b, a)]$

(2)   Sometimes someone buys something.   **a step-by-step derivation**
   a. $[\![\text{something}]\!] = x$
   b. $[\![\text{buys}]\!] = \lambda x \lambda y.\text{buys}(y, x)$
   c. $[\![\text{buys something}]\!] = \lambda y.\text{buys}(y, x)$
   d. $[\![\text{someone}]\!] = y$
   e. $[\![\text{someone buys something}]\!] = \text{buys}(y, x)$
   f. $[\![\text{sometimes}]\!] = \lambda p \exists a, b[\![p]\!]^{[x \to a, y \to b]}$
   g. $[\![\text{sometimes someone buys something}]\!] = \exists a, b[\text{buys}(b, a))$

A. Demonstrate your knowledge of one of the two main theories of plurals by providing two compositional derivations for the ambiguous sentence below.

   (3)   The students carried the piano.

B. Demonstrate your knowledge of one of the two main theories of event semantics (Davisionian or Neo-Davidsonian) by providing a compositional derivation (using events!) for the sentence below.

   (4)   The train broke down and it surprised Kendra.

C. Demonstrate your knowledge of situation semantics by providing a compositional derivation (using situations!) for the sentence below.[1]

   (5)   If the toddler cries, they might be tired.

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[1]They *they* in (5) is a singular gender-neutral pronoun, no need to represent ϕ-features in your semantics.